

KOT. ~~Kotik~~ (Budapest XIV. Vajdahunyadvar, Ungarn); VARGA, Lajos (Sopron,
Bajcsy-Zsilinszky u.3, Ungarn)

Data regarding the microflora and microfauna in the arms of the
Danube near Baja. Acta biol Hung 11 no.3:187-217 '60. (KEAI 10:4)

1. Botanische Abteilung (Vorstand: B.Zolyomi) des Ungarischen
Naturwissenschaftlichen Museums, Budapest und Badenbiologisches
Forschungslaboratorium (Vorstand: G.Pantos) der Ungarischen
Akademie der Wissenschaften, Sopron.

(HUNGARY--MICROFLORA)

(HUNGARY--MICROFAUNA)

(DANUBE RIVER)

KOL. Erzsébet

HUNGARY

PhD

Budapest, Micrologiai Közlemény, No 5, Oct 62, pp 434-438.

"Kryobiological Studies in the Hungarian Central
-Range; I. The Bukk- and Sator Mountains."

PETRUSHOV, A., doktor ekonom.nauk; APANAS'YEV, L.A., kand.ekonom.nauk;
 DANILEVICH, M.V., kand.ekonom.nauk; YEGIAZAROVA, E.A., kand.ekonom.
 nauk; KOVALEN, Ye.V.; KOZ', M.A.; KUZNETSOV, B.P., kand.ekonom.
 nauk; KUTSOBINA, N.K.; MARTYNOV, V.A., kand.ekonom.nauk; MEN'SHI-
 KOVA, M.A.; NIKITENKO, B.A.; ONUFRIYEV, Yu.G.; PROKHOROVA, G.N.;
 RYDVANOV, N.F.; SEGAL', N.M., kand.istor.nauk; UKHOVA, A.M.; FARIZOV,
 I.O., kand.istor.nauk; SHIFRIN, E.L., doktor ekonom.nauk; SHLIKHTER,
 A.A., kand.ekonom.nauk; LISOVSKIY, Yu.P.; MARTYNOV, V.D.; GARSIA, L.,
 red.; MOSKVINA, R., tekhn.red.

[Agriculture of capitalist countries; a statistical manual] Sel'skoe
 khoziaistvo kapitalisticheskikh stran; statisticheskiy spravochnik.
 Otvet.red.A.Petrushov. Moskva, Izd-vo sotsial'no-ekon.lit-ry, 1959.
 829 p. (MIRA 13:6)

1. Akademiya nauk SSSR. Institut mirovoy ekonomiki i mezhdunarodnykh
 otnosheniy.
 (Agriculture--Statistics)

KOL', Mariya Adol'fovna; PANTILEV, V., red.; CHAPELEVA, O., tekhn.red.

[Plantations and profits] Plantatsii i pribyli. Moskva, Izd-vo
sotsial'no-ekon.lit-ry, 1960. 98 p. (MIRA 13:11)
(Underdeveloped areas) (Agriculture--Tropics)

KCL 3. 1.

"Determining the speed of filtration of the Substream Flow", Trudy GGI, No 8 (62),
1948 (175-187)

SO: U-3639, 11 Mar 1953

1. KOL', V. M.: VOINOV, Yu. L.
2. USSR (600)
4. Cabbage
7. Growing cabbage seed on the state farm. Sad i og. no. 11, 1952.
9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

1. KOL', V. M.; VOYNOV, YU. L.; DOMIN, S. I.

2. USSR (600)

4. Mangel-Wursel

7. For high yields of fodder best seed, Dost. sel'khoz., no. 4, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

KOLA, W.

Liverworts (Hepaticae) of the Slessa Massif. Prace botan no.1;
193-228 '63 [publ. '64].

KOLABAYEV, N.M.; BALGOZHIN, Sh.O., dotsent

Analysis of the efficiency of using the MPK powered movable supports.
Sbor. nauch. trud. Kaz GMI no.19:29-39 '60. (MIRA 15:3)
(Mine timbering)

KOLARSKI, B.; WOJCIKOWICZ, S.

The results of research on the prototype of the first vibrating roller of domestic production. p. 65.

DROGOWNICTWO. (Wydawnictwa Komunikacyjne) Warszawa, Poland. Vol. 14, no. 3, March, 1959

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 7, July 1959

Uncl.

KOLABOVA, K. M. and NEMNOV, S. A.

Kolabova, K.M.

"Interrelationship of Some X-ray Spectral and Magnetic Characteristics of Iron-Base Alloys"

Materials of the 2nd All-Union Conference on X-ray Spectroscopy; Moscow, January 31 to February 4, 1957 (Materialy II Vsesoyuznogo soveshchaniya po rentgenovskoy spektroskopii; Moskva, 31 yanvarya - fevralya 1957 g.)

Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1957, Vol 21, Nr 10, pp 1341-1342 (USSR)

UFAN. 555R

KOLAESKIY, N. A.

"Mange in reindeer and its Treatment"

SOURCE: Bolezni Loshaday, Sbornik Rabot, Ogiz-Sel.'khozgiz, 1947
(Table of Contents for "Equine Diseases")

KOLABSKIY, N. A.

23533

AMEBOV SVINEY. SBORNIK NAUCH. TRUDOV (LENINGR. VET. IN-T), VYP. 10, 1949,
c. 84-86

So: LETOPIS' NO. 31, 1949

KOLABSKI, N. A.; YUSHKOVSKI, M. A.; TRILENKO, V. A.
Leningrad Veterinary Institute and Kolomensk Veterinary Polyclinic
of Leningrad.

"The clinic and hematology of mating disease of horses."
SO: Veterinariya 26(2) 1949, p. 18

KOLABSKIY, N. A.

PA 161T81

USSR/Medicine - Protozoology
Societies, Medical

Jun 50

"Scientific Conference on Problems of Protozoology,"
Docent N. A. Kolabskiy, Chair of Parasitol, Leningrad Vet Inst, 1½ pp. Conference held 28 Feb - 4 Mar 50

"Veterinariya" No 6 Vol 27, p 62, June 1950

Lists titles and authors of 35 reports read at subject conference held 28 Feb - 4 Mar 50 at Leningrad Vet Inst in honor of 80th anniversary of Vasilii Larionovich Yakimov, Hon Worker of Sci RSPSR.

Lists six discrepancies in scientific research work in protozoology.

161T81

Trans # 225

KOLASSKI, N. A.

"Bovine babesiosis and the fight against it" ~~Magazin~~
Leningrad. Lenizdat, 1951. 23 pages with illustrations.

SO: Vet., March 1952, Unclassified.

KOLABSKIY, N. A.

"Hemosporidiosis of agricultural animals"
Moscow-Leningrad. Sel'khozgiz, 1951. 36 pages with
illustrations.

SO: Vet., March 1952. Unclassified.

In his booklet, the author presents general ideas about
hemosporidiosis, their emergence; symptoms and course of the
illness, and he indicates the measures of the fight and
prevention of it.

KOLAB KIY, N. A.

"Experiments in immunization of cattle in babesiasis", (Lecturer, Parasitology Department). Collected Works No. 14, of Leningrad Veterinary Institute USSR Ministry of Agriculture, P 5; Sel'khozgiz, 1954.

KOLASCKIY, N. A.

"On the development of hemosporidiae of the family Piroplasmidae in the organism of vertebrates", (Lecturer, Parasitology Department), Collected Works No. 14, of Leningrad Veterinary Institute USSR Ministry of Agriculture, p 9, Sel'khozgiz, 1954.

COUNTRY : USSR
 CATEGOR :
 ABST. JOUR. : RZBiol., No. 3 1957, No. 10284
 AUTHOR : Kolabskiy, N. A., Gaydukov, A. Kh.
 INST. : Leningrad Veterinary Institute
 TITLE : Experiments on the Attenuation of Virulent
 Properties of the Pathogens of Equine
 Nuttalliosis
 ORIG. PUB. : Sb. rabot Leningr. vet. in-t, 1957, No 16, 80-83
 ABSTRACT : When colts were infected with the blood of horses
 containing Nuttallia equi 27-38 days after its first
 passage it was impossible to produce the disease
 in the colts which had recovered from the
 injection of nuttallias which had been passaged
 3 times. The same results were obtained in colts
 after the injection of blood containing these
 parasites which had been passaged 4, 5, and 7
 times. The pathogen of equine nuttalliosis when
 passaged through the bodies of susceptible
 CARD: 1/2

KOLABSEIY, N.A., dots.; KHVAN BOM KHVA; KIM DON KHI

Control of thileriasis in the Korean People's Democratic Republic.
Veterinariia 36 no.8:28-31 Ag '59. (MIRA 12:11)

1. Leningradskiy veterinarnyy institut (for Kolabskiy). 2. Nauchno-
issledovatel'skiy veterinarnyy institut Koreyskoy Narodno-demokrati-
cheskoy Respubliki (for all except Kolabskiy).
(Korea, North--Theileriasis)

KOLABSKIY, N. A. *Docent.*

"Honoured Scientist of the RSFSR professor V. L. Yakimov and his role in
the development of veterinary protozoology and chemotherapy."

Veterinariya Vol. 37, No. 3, 1960, p. 94

Leningrad Vet. Inst.

KOLABSKIY, N.A.

PROTASOV, A.I., dotsent; SINIV, A.V., prof.; SMIRNOV, A.M., dotsent;
 BAZHENOV, A.N., dotsent; VIL'NER, A.M., prof.; BASHMURIN, A.F.,
 dotsent; SHAKALOV, K.I., prof.; VILLER, A.A., prof.; NIKANOROV,
 V.A., prof.; FEDOTOV, V.P., dotsent; KUZNETSOV, G.S., prof.;
 BOCHAROV, I.A., prof.; SHCHERBATYKH, P.Ya., prof.; TSION, R.A.,
 prof.; GRIBANOVSKAYA, Ye.Ya., dotsent; ADAMANIS, V.F., assistant;
 KOLABSKIY, N.A., dotsent; MITSKEVICH, V.Yu., dotsent; GUSEVA, N.V.,
 dotsent; MYSHKIN, P.P., dotsent; GUBAREVICH, Ya.G., prof.;
 FEDOTOV, B.N., prof.; DOBIN, M.A., dotsent; SIROTKIN, V.A., prof.
 [deceased]; KUZ'MIN, V.V., prof.; YEVDOKIMOV, P.D., prof.; POLYAKOV,
 A.A., prof.; POLYAKOV, P.Ya., red.; BARANOVA, L.G., tekhn.red.

[Concise handbook for the veterinarian] Kratkii spravochnik veteri-
 narnogo vracha. Leningrad, Gos.isd-vo sel'khoz.lit-ry, 1960. 624 p.
 (MIRA 13:12)

(Veterinary medicine)

KOLABSKIY, N. A., CHIZH, A. N., GAIDUKOV, A. KH. and TARVERDYAN, T. N.

"The Development of a Method of Conserving Blood with a View to Retaining in it the Viability of the Dog Piroplasmosis and Cattle Babiellosis Virus."

Tenth Conference on Parasitological Problems and Diseases with Natural Reservoirs, 22-29 October 1959, Vol. II, Publishing House of Academy of Sciences, USSR, Moscow-Leningrad, 1959.

Leningrad Veterinary Institute and Leningrad Institute of Blood Transfusion

KOLABSKIY, N. A.

Doc Vet Sci - (diss) "Study of immunity and the problem of immunization in several hemosporeidiosis." Leningrad, 1961. 29 pp; (Ministry of Agriculture RSFSR, Leningrad Veterinary Inst); 300 copies; price not given; list of author's works on pp 28-29 (13 entries); (KL, 7-61 sup, 254)

KUZNETSOV, G.S., prof., otv. red.; BOCHAROV, I.A., prof., red.; VOKKEN, G.G., prof., red.; TSION, R.A., prof., red.; DMITROCHENKO, A.P., prof., red.; SINEV, A.V., prof., red.; PEDOTOV, B.N., prof., red.; CHERNYAK, V.Z., prof., red. Primalni uchastiye: NIKOL'SKIY, S.N., prof., red.; KHEYSIN, Ye.M., prof., red.; GUSEV, V.F., dots., red.; KOLABSKIY, N.A., dots., red.

[Papers presented at the Conference on Protozoological Problems Dedicated to the 90th Anniversary of the Birth of Professor V.L. IAKimov] Sbornik rabot Nauchnoi konferentsii po protozoologicheskim problemam, posvlashchennaia 90-letiu so dnia rozhdenia professora V.L.IAKimova. Leningrad, 1961. 292 p. (MIRA 15:6)

1. Nauchnaya konferentsiya po protozoologicheskim problemam, posvyashchennaya 90-letiyu so dnya rozhdeniya professora V.L. Yakimova.
 2. Stavropol'skiy sel'skokhozyaystvennyy institut (for Nikol'skiy).
 3. Institut tsitologii Akademii nauk SSSR (for Kheysin). 4. Leningradskiy veterinarnyy institut (for Kolabskiy).
- (Protozoology—Congresses)

KOLABSKI, N. A., BARSUKOVA, T. M., SUZ'KO, S. F. and TARVERDYAN, T. N. (Leningrad
Veterinary Institute)

"Comparative evaluation of medicinal preparations in the coccidiosis of chickens"

Veterinariya, vol. 39, no. 7, July 1962 pp. 54

KOLABSKIY, N.A., dotsent

Professor V.L.IAkimov, Honored Scientist of the R.S.F.S.R. and his
role in the development of veterinary protozoology and drug therapy.
Veterinariia 37 no.3:94-95 Mr '60. (MIRA 16:6)

1. Leningradskiy veterinarnyy institut.
(IAkimov, Vasil'ii Larionovich, 1870-)

KOLABSKIY, N.A.; Krapivner, L.M.; KUKHTA, P.P.

In the Soviet Union. Veterinariia 37 no.7:92-96 J1 '60.

(MIRA 16:2)

(Veterinary medicine)

KOLABSKIY, N.A.; BARSUKOVA, T.M.; SUZ'KO, S.F.; TARVERDYAN, T.N.

Comparative evaluation of the therapeutic properties of some preparations against coccidiosis in chicks. Veterinariia 39 no.7:54-56
Jl '62. (MIRA 18:1)

1. Leningradskiy veterinarnyy institut.

CZECHOSLOVAKIA/Atomic and Molecular Physics - Low Temperature
Physics

D

Abs Jour : Ref Zhur Fizika, No 9, 1959, 20108

Author : Kolac, M.

Inst : -

Title : Physics of Low Temperature

Orig Pub : Pokroky mat., fys. a astron., 1958, 3, No 5, 575-588

Abstract : Scientific-popular article on helium temperatures and
super low temperatures.

Card 1/1

- 27 -

AUTHORS: Kolář, M.^{105/AV} and Šott, M.

CZECH/37-58-6-16/30

TITLE: Non-conservation of Parity in the β -Decomposition
(Nezachování parity při rozpadu β)

PERIODICAL: Československý časopis pro fyziku, 1958, Nr 6,
pp 722 - 733 (Czech)

ABSTRACT: During the second half of 1956 the problem of conservation of parity during weak interactions became very acute. From then onwards, a number of theoretical and experimental results were published. The greatest attention was paid to the problem of non-conservation of parity during decomposition of β -radioactive nuclei. In this paper, the experimental state in this field is reviewed on the basis of information which was published and available to the authors up to May, 1958. These results are summarised in Table 1, pp 729-730. The author concludes that it can now be stated definitely that during β decomposition, parity does not remain conserved. Most of the information is based on Western work. There are 64 references, 54 of which are English, 3 German, 1 Swedish, 4 Soviet and 2 Czech.

Card1/2

KOLAC, Miroslav; NEDVED, Jiri; SOUKUP, Frantisek; SAFRATA, Stanislav;
SVEC, Karel; SOTT, Miloslav.

Equipment for the study of gamma radiation of oriented nuclei.
Jaderna energie 10 no.7:243-246 J1'64

1. Institute of Nuclear Research, Czechoslovak Academy of
Sciences, Rez.

2/037/61/000/001/007/007
E024/E335

AUTHOR: Kolář, Miroslav

TITLE: First National Conference on Low Temperatures

PERIODICAL: Československý časopis pro fyziku, 1961
No. 1, pp. 89 - 90

TEXT: The First National Conference was held on September 19-21, 1960. It was convened by the Ústav jaderného výzkumu CSAV (Institute of Nuclear Research, CSAV) jointly with the Komise pro jadernou techniku při Československé vědecko-technické společnosti (Commission for Nuclear Engineering, Czechoslovak Scientific-technical Society). S. Šafrata (Institute for Nuclear Research) talked about low temperatures in nuclear physics. Cooling by liquid hydrogen and helium is used in vacuum technique for accelerators, in the study of optical hyperfine structure, to freeze defects in irradiated specimens and to obtain high-intensity beams of cold neutrons. High-energy elementary particles are studied with the aid of hydrogen bubble chambers and liquid hydrogen or helium is often used as targets for nuclear reactions.

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Card 1/5

Z/037/61/000/001/007/007
E024/E335

First National Conference on Low Temperatures

Recently, studies of the Mössbauer effect at low temperatures have become fashionable. At the Institute of Nuclear Studies, experiments are being prepared for the study of orientated nuclei at temperatures below 1 °K. A calorimeter with liquid nitrogen for absolute dosimetry of radioactive radiations was described by Z. Kovář (Institute of Nuclear Research). J. Pařes (FÚ ČSAV) discussed magnetism at low temperatures. Magnetic research at the Institute of Physics aims at studying antiferromagnetic materials at low temperatures. L. Stourač (ÚTF ČSAV) discussed the use of low temperatures in semiconductor physics, such as the Hall effect, thermal conductivity, thermoelectric effects, cyclotron resonance, etc. The Institute of Technical Physics intends to include these subjects in its work. Low temperatures permit an increase in resolution of spectrometers for nuclear and electron resonance. M. Odehnal (ÚJV) discussed their use for the analysis of

Card 2/5

Z/037/61/000/001/007/007
E024/E335

First National Conference on Low Temperatures

hyperfine structures of resonance lines and for the study of magnetic moments of nuclei. He further discussed the dynamic polarization of nuclei and MASER.

The Institute of Nuclear Research has studied two-quantum transitions and the dynamic polarisation of protons at room temperature and intends to study the dynamic polarization at low temperatures.

M. Litomiský and M. Kolář (ÚJV) discussed some experimental methods at low temperatures.

A. Čížek reported measurements of resistants with an accuracy of 10^{-4} .

K. Málek (ČKD Stalingrad) described an electromagnet, type LAMA 80, with a gap adjustable from 25-125 mm, maximum diameter of the pole pieces 280 mm. With a gap of 60 mm and with pole pieces 210 mm in diameter, a field of 23 kOe is achieved. The consumption is up to 80 kW.

Two helium liquefiers have been installed in Czechoslovakia

Card 3/5

Z/037/61/000/001/007/007
E024/E335

First National Conference on Low Temperatures

this year. One was made in Czechoslovakia following a Soviet construction, the other was made in Germany.

J. Prušák (ÚJV) talked about one of the two plants built in Czechoslovakia for liquefying helium at the rate of 10 litres per hour, using pre-cooling with liquid nitrogen, hydrogen and the Joule-Thomson phenomenon.

M. Krížek spoke of a second helium liquefier of a 3 litres per hour capacity, manufactured by Linde, West German.

V. Sahánek (FÚ) spoke of a hydrogen liquefier built on the basis of Soviet designs.

J. Nedvěd (ÚJV) discussed the problems of transporting liquid helium.

Several speakers discussed methods used in the large-scale production of oxygen.

J. Valeta (Stalin Works) spoke of a low-pressure method of manufacturing oxygen.

A. Urban (Královopolské strojírny, Praha - Královopole Engineering Works, Prague) spoke of the Czech-produced

Card 4/5

Z/037/61/000/001/007/007
E024/E335

First National Conference on Low Temperatures

low-pressure oxygen-manufacturing plant, NKP-5.

L. Vinš (ZVÚ) spoke on the influence of separating gas mixtures on using cooling cycles.

V. Smolík (ZVÚ) spoke of designs and materials for such equipment.

O. Scholz (SVÚMT, Prague) spoke of testing materials used in deep cooling plant.

J. Růžička (ÚJV) discussed the use of low temperatures in the production of heavy water.

There were 80 participants in the conference and it was suggested that a second conference be held in 1962.

ASSOCIATION: Ústav jaderného výzkumu, Řež
(Institute for Nuclear Research, Řež)

SUBMITTED: October 1, 1960

Card 5/5

KOLACEK, Frantisek; ERBAN, Pavel, inz.

Problems of the development of power engineering in Czechoslovakia.
Energetika Cz 12 no.10:505-508 0 '62.

1. Vysoka stranicka skola pri Ustrednim vyboru Komunisticke
strany Ceskoslovenska (for Kolacek). 2. Ministerstvo paliv
a energetiky (for Erban).

KOLACEK, Frantisek; ERBAN, Pavel, ins.

Increasing the efficiency of power resources management. Energetika
Cz 12 no.11:561-564 N 162.

KOLACEK, Frantisek; ERBAN, Pavel, ins.

Ensuring the maximum increase of performance with minimum sources.
(Continuation). Energetika Cs. 12 no.12:618-621 D '62.

KOLACEK, Karel

Statistical evaluation of 1000 cataract operations. Cesk. ofth.
16 no.2:160-163 Mr '60

1. Oni oddeleni MUNZ Ostrava, predmosta prim. MUDr. M. Rubesek,
(CATARACT EXTRACTION statist.)

Kolacek, S.

Construction of farm buildings. p. 292. NOVA TECHNICA. (Rada
vedeckych technickych spolecnosti pri Ceskoslovenske akademii
ved) Praha. Vol. 4, no. 7, July 1954.

Source: EEAL LC Vol. 5, No. 10 Oct. 1956

KOLACEK, S.

Rationalization of the construction of farm buildings, p. 316,
POZEMNI STAVBY, (Ministerstvo stavebnictvi) Praha, Vol. 3, No. 8,
Aug. 1955

SOURCE: East European Accessions List (EEAL) Library of Congress,
Vol. 4, No. 12, December 1956

E 26377-65 EWP(t)/EWP(b) DIAAP/I.F.(c) JD

Z/0038/64/010/007/0243/0246

ACCESSION NR: AP4042144

AUTHOR: Kolach, Miloslav (Kolach, M.); Nedweda, Jiri; Soukup, Frantisek; Sadrata, Stanislav (Sadrata, S.); Sott, Miloslav (Sott, M.); Svec, Karel (Svets, K.) 28
15

TITLE: A device for studying the gamma radiation of oriented nuclei 19
8

SOURCE: Internas energie, v. 10, no. 7, 1964, 243-246

TOPIC TAGS: gamma radiation, oriented nucleus, paramagnetic crystal, adiabatic demagnetization, one stage cryostat, liquid helium bath, vacuum casing, thermal insulation, scintillation spectrometer 21

ABSTRACT: The article describes a device with which a temperature on the order of 0.01°K was reached for the first time in the CSR in a paramagnetic crystal by adiabatic demagnetization, starting from a temperature of 1°K to which the crystal was cooled. A one-stage cryostat and the experimental space with the sample were cooled in a liquid helium bath with a temperature of 4.2°K. Thermal insulation was ensured by a vacuum casing. Vacuum apparatus, mostly of glass, served for the various spaces of the low-temperature apparatus and to ensure the liquid helium feed. In the verification of the operation of the whole device 10⁶ nuclei were oriented, set up directly in the cooling crystal of cerium magnesium

L 26372-65

ACCESSION NR: AP4042144

5

nitrate. Adiabatic demagnetization of this crystal was effected with a IAMA 80 electromagnet of a maximum field intensity of more than 20,000 gauss to zero field strength. The Co^{60} nuclei were then oriented by the Bleary method. Gamma radia-

tion was detected by single channel scintillation spectrometers in the $\theta = 0$ and $\theta = 180^\circ$ directions. The temperature of the crystal after demagnetization was measured by the adiabatic method from the change of its susceptibility. The dependence

of the magnetic susceptibility in a paramagnetic crystal was measured. The temperature dependence of the magnetic susceptibility and the characteristic curves $W(0)$ and $W(\pi/2)$ after demagnetization were measured in the experiments. The experimental results show that the results are in good agreement with the theoretical results. In the interval $0.01 \leq T \leq 0.1^\circ\text{K}$ the measured value is less than the theoretical value.

The results obtained are in agreement with other experiments with Co^{60} in which the same methods of orientation were used, and confirm the correct functioning of the same methods for studying oriented radioactive nuclei during the fund of research in nuclear physics. The authors express their thanks to their colleagues: Horakov, Praskov, Rodov, and Iediny in the building and testing of the apparatus. The article has 6 formulas and 4 figures.

Card 2/3

L 26372-65

ACCESSION NR: AP40421/4

ASSOCIATION: Ústav jaderného fyzikumu ČS. V. (Institute of Nuclear Physics,
CSAV)

SUBMITTED: 00

ENCL: 00

SUB CODE: NP, SS

NO REF SOV: 000

OTHER: 006

Card 3/3

1. KOLACH, T. A.
2. USSR (600)
4. Pumping Machinery
7. Selection of centrifugal pumps and means for increased economy on pump installations.
Prom. energ. No. 3, 1953.
9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

KOLACH, T.A., kand. tekhn. nauk

Distribution of functional temperature difference between the
stages of a uniflow evaporating system. Trudy MEI no.48:23-30
'63. (MIRA 17:6)

KOLACHE, T. A.

"Investigation of the Influence of the Speed of Circulation and the Vapor Content of a Mixture on the Process of Heat Exchange While Boiling in a Vertical Evaporation Apparatus." Cand Tech Sci, Moscow Order of Lenin Power Engineering Institute imeni V. M. Molotov, Min Higher Education USSR, Moscow, 1954. (KL, No 1, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)

SO: SUM No. 556, 24 Jun 55

KOLACH, T. A.

USSR/Processes and Equipment for Chemical Industries - Processes and Apparatus for
Chemical Technology, K-1

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 63911

Author: Sorokin, A. F., Kolach, T. A.

Institution: None

Title: Effects of Some Factors on Heat Emission During the Boiling of Liquid
in Pipes

Original
Periodical: Tr. Mosk. energ. in-ta, 1956, No 24, 41-63

Abstract: Experimental investigation of the process of boiling of water and
aqueous solutions of sugar in a vertical pipe, with determination of
mean values of the coefficient of heat emission α , by zones (in height)
of the pipe. Use was made of a steel pipe 32 mm inside diameter and
2 m high heated with steam and connected into a closed circuit of
natural or forced circulation. In height the pipe is divided in 3
zones; at the bottom part of each zone is provided a collector for
the removal and measuring of the condensate formed. Thermal loads q

Card 1/3

USSR/Processes and Equipment for Chemical Industries - Processes and Apparatus for Chemical Technology, K-1

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 63911

Abstract: were varied within the limits from 10^3 to $1.5 \cdot 10^5$ kcal/m² hour. It was found that the dependence of mean value of α , over the entire pipe, on q , during boiling of water is represented by the equation $\alpha = 81.8q^{0.4}$; on boiling of sugar solutions this dependence is of the form: with a 10% solution $\alpha = 56.75q^{0.43}$; with a 20% solution $\alpha = 33.4q^{0.47}$ and with a 40% solution $\alpha = 22.65q^{0.49}$. With increase in pressure the relative increase in heat emission intensity α/α_0 is proportional to $(p/p_0)^{0.2}$ wherein α is the coefficient of heat emission at pressure p and α_0 at atmospheric pressure p_0 . To determine the influence of vapor content β of the flow, a comparison of α by zones was carried out. It was found that β increases very rapidly along the pipe and at the section 0.2 of the height from the bottom of the pipe reaches 80-90%. At the same time α depends little on β , but with $\beta > 95\%$ it drops sharply since with a high β great velocities of the vapor occur which strip the film of liquid from the pipe wall. From the results of experiments relating to the middle zone, which is characterized by a boiling over the entire surface, the general correlation has been determined:

Card 2/3

50V/143-58-9-9/18

AUTHOR: Kolach, T.A., Candidate of Technical Sciences;
Zenkevich, V.B., Engineer

TITLE: A Study of the Specific Heat of Electrolytic Alkalies
(Issledovaniye ~~teploymkosti~~ elektroliticheskikh
shchelokov)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - Energetika,
1958, Nr 9, pp 61-64 (USSR)

ABSTRACT: To determine the specific heat of electrolytic alkalies,
the method of direct heating with an isothermic cover
for the calorimeter was used. The paper describes the
experimental equipment and the measuring methods. The
following solutions were investigated: NaOH, NaCl,
Na₂CO₃, NaClO₃, Fe (natural) and SO₄ in weak, average
and strong concentrations. Tests were carried out in
the temperature range 40 - 100°C. The accuracy of
empirical data was checked, and it emerged that the
maximal possible proportional error when determining
c_p (specific heat) does not exceed 0.34%. The lowest

Card 1/2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723710019-1

A Study of the Specific Heat of Electrolytic Alkalies

specific heat values for any given temperature were
obtained with strong alkalies (42.6°C - 101.17°C, 0.785
- 0.806) which have the largest NaOH content and the
smallest NaCl content. The largest specific heat
values were found with the average alkalies (42.0°C -
100.4°C, 0.850 - 0.874); the weak alkalies despite a
considerable drop in the NaOH content in the solution
compared to average electrolytes, had lower specific
heat values (41.8°C - 100.6°C, 0.821 - 0.845). (The
values for specific heat are expressed in cal³/kg°C.)
This is explained by the fact that in weak alkalies
the NaCl content is considerably higher than in the
average ones. There are 2 sectional diagrams, 2
tables and 2 Soviet references.

ASSOCIATION: Moskovskiy ordena Lenina energeticheskii institut
(Moscow Power Engineering Institute)

SUBMITTED: May 12, 1958

Card 2/2

SOV/143-589-10/18

AUTHOR: Kolach, T.A., Candidate of Technical Sciences;
Grigor'yev, V.A., Engineer

TITLE: Study of the Viscosity of Electrolytic Alkalis
(Issledovaniye elektroliticheskikh shchelokov)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - Energetika,
1958, Nr. 9, pp 65-67 (USSR)

ABSTRACT: The paper contains the results of experimental tests on the viscosity of electrolytic alkalis. The test equipment is first described. A comparative method is employed using a Pinkevich glass viscosimeter for measuring viscosity. The equipment consists of a vertical electric furnace, in which a metal pot-thermostat filled with turbine oil is placed. The viscosimeter is placed vertically in the pot, in the walls of which heat proof glass windows are let in to observe as the fluid flows out into the capillaries of the viscosimeter. The temperature of the solution was measured with a copper-constantan thermoelement. To record the

Card 1/3

SOV/14358-9-10/18

Study of the Viscosity of Electrolytic Alkalies

temperature field in the thermostat fluid a three-junction copper constantan differential thermoelement was used. The temperature field was also measured in a radial direction using a comb of 4 thermoelements. The temperature difference between the lower end of the capillary and the measuring ball did not exceed 0.25°C. The viscosity of the solution was determined by the formula:

$$V_t = c_t \tau - \frac{0.56 Q \tau}{8 L \tau} \text{ ccm}$$

where V_t is the kinematic viscosity of the solution, c_t = the viscosimeter constant at the test temperature in ccm/sec, τ = outlet time of the work volume (in secs) of the fluid, L = capillary length in mm and $Q\tau$ = work volume of the fluid which flows through the viscosimeter in the time τ . There is 1 graph and 3 Soviet references.

ASSOCIATION: Moskovskiy ordena Lenina energeticheskiy institut
(Moscow Power Engineering Institute)

Card 2/3

5(4), 5(2)

8GV/64-59-1-19/24

AUTHORS:

Kolach, T. A., Candidate of Technical Sciences, Grigor'yev,
V. A., Candidate of Technical Sciences

TITLE:

Exchange of Experience (Obmen opytom). Investigation of the
Viscosity of Electrolytic Lyes (Issledovaniye vyazkosti
elektroliticheskikh shchelokov)

PERIODICAL:

Khimicheskaya promyshlennost', 1959, Nr 1, pp 85-87 (USSR)

ABSTRACT:

The investigations mentioned in the title were made with solutions the composition of which (Table) corresponded to that of electrolytic lyes in evaporating plants. The viscosity was determined by the comparison method by use of glass viscosimeters according to Pinkevich. The viscosimeters were calibrated by the Institut mer i izmeritel'nykh priborov (Institute for Measures and Measuring Instruments). The measuring instrument (Fig 1) was provided with an electric furnace, the temperature of the test solution was measured with copper/Constantan thermocouples. The temperature gradient was also measured. The measurement of temperature was carried out according to a compensation scheme ($\pm 0.06^\circ$) by means of a potentiometer PPTV-1 and a reflecting galvanometer M-21. The kinematic viscosity of the solutions was determined in the temperature range of between 20° and $10-15^\circ$ below the boiling

Card 1/2

SOV/64-59-1-19/24

Exchange of Experience. Investigation of the Viscosity of Electrolytic
Lyes

point of the solution, and was represented graphically in comparison with data (Ref 3) on the viscosity of mixtures of aqueous NaOH and NaCl solutions (Fig 2). The evaluation of the experimental results according to an equation (4) on the temperature course of the viscosity curves is also indicated (Fig 3). There are 3 figures, 1 table and 3 Soviet references.

Card 2/2

SOV/96-59-4-20/21

AUTHOR: Kolach, T.A., Candidate of Technical Science

TITLE: A Conference Between Technical Colleges on the Intensification and Combination of production processes in industrial power engineering (Mezhvuzovskaya konferentsiya po intensifikatsii i kombinirovaniyu proizvodstvennykh protsessov v promyshlennoy teploenergetike)

PERIODICAL: Teploenergetika, 1959, Nr 4, pp 95-96 (USSR)

ABSTRACT: At the end of December 1958, at the Moscow Power Institute, there was held a scientific conference between technical colleges on the intensification and combination of production processes in industrial thermal power engineering organised by the Ministry of Education and GNTK (State Scientific and Technical Inspection) of the Council of Ministers of the USSR. The conference was attended by 230 delegates from power engineering, polytechnical and technological colleges and by representatives from industrial undertakings, scientific research and design institutes and other organisations from 29 towns of the Soviet Union. Consideration was given to a number of organisational and scientific-technical problems in industrial thermal power engineering.

Card 1/3

SOV/96-59-4-20/21

A Conference Between Technical Colleges on the Intensification and
Combination of Production Processes in Industrial Power Engineering

The following reports were read at the plenary sessions:
Tasks and prospective development of Soviet industrial
thermal power engineering by Engineer I.G.Tikhomirov
(GNTK); The training of engineering and Scientific Staff
for industrial power engineering by Doctor of Technical
Sciences P.D.Iebedev, Ministry of Higher Education of the
USSR; The organisation of thermal-technical service at
industrial undertakings by Engineer V.A.Gerasimenko,
GOSPLAN, USSR. The work of the conference was divided
between a number of sections namely, furnace engineering,
heat supply and thermal power installations, drying and
heat exchange equipment. Each section had three sessions
and altogether 45 reports were read and a large number of
delegates took part in the discussion. The subjects
discussed at the conference are briefly reviewed. The
faculty of industrial thermal power engineering of the
Moscow Power Institute, as the leading faculty in this
field, was given the task of preparing staff for
technical colleges in the provinces and for other
laboratories. The recommendation was made to organise

Card 2/3

SOV/96-59-4-20/21

A Conference Between Technical Colleges on the Intensification and
Combination of Production Processes in Industrial Power Engineering

a central scientific research institute in industrial thermal power engineering to plan and coordinate scientific investigations in this subject. However, a single institute could not possibly cover the field effectively and various other institutes were asked to take part in such work. The need for a new journal on thermal power engineering was emphasised, either a new journal should be started or Teploenergetika should be enlarged or the journal Promyshlennaya Energetika, which is now a departmental journal which cannot deal with all the problems of industrial thermal power engineering, should be reconstructed. A number of examples of bad work of various kinds were brought to light.

Card 3/3

5.1210

8/170/60/003/07/07/011
B012/B054

82233

AUTHORS: Kolach, T. A., Zenkevich, V. B.

TITLE: A Generalized Relationship for the Viscosity of
Distilled Fuels

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 7,
pp. 95 - 97

TEXT: The authors study the possibility of drawing the temperature curve of viscosity according to one value for the distilled fuels now in use. The petroleum products used in the experimental investigation of viscosity are listed. The kinematic viscosity was measured in the temperature range between 20 and 100°C. A viscosimeter of the Pinkevich type was used. A correction was introduced for the kinetic fluid energy and for the temperature-dependent expansion of the viscosimeter glass (Ref. 3). With the use of the reduced parameters, the data obtained were joined to a curve: $\nu^* = \nu/\nu_{0.65}$ and $\tau = T/T_m$. ν is the kinematic viscosity at T in °K; T_m is the boiling point of the mean volume; X

Card 1/2

A Generalized Relationship for the Viscosity of Distilled Fuels S/170/60/003/07/07/011
B012/B054 82233

$\nu_{0.65}$ is the value of ν at $\tau = 0.65$. All experimental points (Fig. 1) lie with sufficient accuracy on one single, slightly ascending curve. If such a curve is drawn for a reference substance, the temperature dependence of viscosity can be reproduced for another related substance whose distillation results are known. Only one experimental viscosity value is needed for the calculation of $\nu_{0.65}$. There are 1 figure and 3 references: 2 Soviet and 1 German.

ASSOCIATION: Moskovskiy ordena Lenina energeticheskiy institut,
g. Moskva (Moscow "Order of Lenin" Institute of Power
Engineering, Moscow) ✓

Card 2/2

SOKOLOV, Yefim Yakovlevich; ZINGER, Nikolay Mikhaylovich; BERMAN, L.D.,
doktor tekhn.nauk, retsentsent; KOLACH, T.A., kand.tekhn.nauk,
red.; LARIONOV, G.Ye., tekhn.red.

[Jet apparatus] Struinye apparaty. Moskva, Gos.energ.isd-vo,
1960. 207 p. (MIRA-13:7)
(Jets) (Hydraulic engineering)

GRIGOR'YEV, V.A., kand. tekhn. nauk; KOLACH, T.A., dots.;
SOKOLOVSKIY, V.S., assistant; TEMKIN, R.M., inzh.;
LEBEDEV, P.D., doktor tekhn. nauk, prof., red.;
ANTIKAYN, P.A., red.; BORUNOV, N.I., tekhn. red.

[Concise manual on heat exchangers]Kratkii spravochnik po
teploobmennym apparatam. By V.S.Grigor'ev i dr. Pod red.
P.D.Lebedeva. Moskva, Gosenergoizdat, 1962. 255 p.
(MIRA 15:9)

(Heat exchangers)

KOLACH, T.A., kand.tekhn.nauk, dotsent

Calculation of the material of an evaporating system during the concentration of crystallizing solutions. Izv. vys. ucheb. zav.; energ. 5 no.7:109-112 J1 '62. (MIRA 15:7)

1. Moskovskiy ordena Lenina energeticheskiy institut. Predstavlena kafedroy sushil'nykh i teploobmennyykh ustanovok. (Evaporating appliances)

KOLACH, T.A.; RADUN, D.V.; UDYMA, P.G., inzh., retsenzent;
DOROGOV, N.P., inzh., red.; TAIROVA, A.L., red. izd-va;
EL'KIND, V.D., tekhn. red.

[Evaporating stations] Vyparnye stantsii. Moskva, Mashgis,
1963. 399 p. (MIRA 16:6)
(Evaporating appliances)

KOLACH, T.A., kand.tekhn.nauk, dotsent

Some results of the work of the Department of Industrial Power
Engineering of Moscow University. Izv. vys. ucheb. zav.; energ.
6 no.2:45-48 P '63. (MIRA 16:3)

1. Dekan fakul'teta promyshlennoy teploenergetiki Moskovskogo
ordena Lenina energeticheskogo instituta.
(Power engineering)

KOLACH, T.A., kand.tekhn.nauk, dotsent

Thermal design of a single-pass evaporator. Izv. vys. ucheb.
sav.; energ. 6 no.2:65-70 P. '63. (MIRA 16:3)

1. Moskovskiy ordena Lenina energeticheskiy institut. Predstavlena
kafedroy sushil'nykh ustroystv.
(Evaporating appliances)

KOLACH, T. A., kand. tekhn. nauk, dotsent

Scientific and technical problems of Soviet industrial thermal
power engineering. Izv vys ucheb zav; energ 7 no. 1:54-63
Ja '64. (MIRA 17:5)

1. Moskovskiy ordena Lenina energeticheskiy institut.

KOLACH, T.A., kand. tekhn. nauk; VVEDENSKIY, Yu.G., inzh.

Study of heat transfer during boiling in vertical tubes. Trudy
MEI no.48:53-66. '63. (MIRA 17:6)

VOIKOV, V.F., kand. tekhn. nauk; LEBEDEV, P.D., prof.; SOKOLOV, Ye.Ya.;
SEMENENKO, N.A.; KOLACH, T.A., dotsent; IVANOV, A.N.; TIKHOMIROV, I.G.;
PAVLOV, M.N.

Training of engineers in the field of industrial power engineering.
Prom. energ. 19 no.11:30-32 N '64. (MIRA 18:1)

1. Ural'skiy politekhnicheskiy institut imeni S.M.Kirova (for Volkov).
2. Moskovskiy ordena Lenina energeticheskiy institut (for Lebedev, Sokolov, Semenenko).
3. Fakul'tet promyshlennoy teploenergetiki Moskovskogo ordena Lenina energeticheskogo instituta (for Kolach).
4. Gosudarstvennyy komitet po koordinatsii nauchno-issledovatel'skikh rabot SSSR (for Ivanov).
5. Nauchno-issledovatel'skiy institut Soveta narodnogo khozyaystva SSSR (for Tikhomirov).
6. Gosudarstvennyy soyuznyy institut po proyektirovaniyu metallurgicheskikh zavodov (for Pavlov).

UDYMA, P.G., inzh.; KOLACH, T.A., kand. tekhn. nauk

Investigating hydrodynamics and heat transfer in apparatus with
submersible burners. Khim. i neft. mashinostr. no.1:16-22
J1 '64. (MIRA 17:12)

KOLACH, T.A., kand.tekhn.nauk, dotsent; KOPCHIKOV, I.A., inzh.

Study of boiling in a thin film. Izv.vys.ucheb.zav.; energ. 8
no.10:50-55 O 1965. (MIRA 18:10)

1. Moskovskiy ordena Lenina energeticheskiy institut. Predstavlena
kafedroy teploobmennyykh i sushil'nykh ustroystv.

KOLACHEV, A.A.

1109. Clinical Features of Hemorrhagic Fever in Babovine. (Клиника геморрагической лихорадки на Буковине)
A. A. KOLACHEV and Y. Y. KOSOVSKIY. Клиническая Медицина [Klin. Med., Mosk.], 27, No. 8, 42-48, Aug., 1949. 10 refs.

Since 1947 the authors have observed a number of cases of hemorrhagic fever in South-west Bukovina, occurring mainly during June, July, and August. Clinical and laboratory investigations at the Czernovits Medical Institute led to the conclusion that the authors were dealing with a disease which had not previously been known to exist. Most cases occurred amongst forest workers and children (gathering mushrooms) who had been bitten by ticks (*Ixodes ricinus*). The illness was not found to be contagious and all age-groups were affected equally.

The incubation period was 10 days. The onset was sudden with a temperature of 39 to 40° C., headache, and general malaise. The temperature usually fell on the 7th day, but sometimes a short relapse occurred. There was hyperemia of the face, conjunctives, and mucous membranes and sometimes herpes of the lips. In more than 90% of the cases a well-defined rash developed, mainly on the lateral aspects of the chest, abdomen, and back, on the second or third day. It subsided within about a fortnight. There was also a hemorrhagic syndrome (epistaxis, vomiting of a little blood, slight hemoptysis, bleeding of the gums, metrorrhagia, subcutaneous hemorrhages, and slight hematuria). The clotting time was prolonged. The blood showed leucopenia, lymphocytosis, monocytosis, and eosinophilia on about the 10th day. A thrombocytopenia was noted in some cases. Most patients had transient neurological symptoms with exaggeration or loss of abdominal, knee, and ankle reflexes. In severe cases there was early loss of consciousness and loss of control over bladder and rectum. The systolic and diastolic blood pressure were low in all cases. The main post-mortem features in the 2 patients who died were hyperemia of the meninges and brain with punctate and diffuse hemorrhages in the brain, liver, stomach, and kidneys. The pathogenesis is not known; the prognosis is usually good. The illness lasts for about 19 days. Similar epidemics have lately been observed in

Quint.
N. Chertok

Abstracts of World Medicine Vol 7 1950

KOLACHEV, B. A. and PETROV, D. A .

"Aging of Copper and Gold Alloys" Tr. Mosk. Aviats. Tekhnol.
in-ta, 23, 1954, 33-43

Microhardness and electric resistivity of Cu_3Au and CuAu Alloys were Studied at 600° hardening and at 100, 135, 170, and 205° annealing. The hardness-time curve of CuAu alloy at 170 and 205° exhibits two maxima, due to the difference in the speed of aging process of the middle grain face. The maximum aging effect of Cu_3Au predominates at 205° and the hardness increases 33% as compared with tempered alloy. The electric resistivity does not change at 135 and 170° and drops at 205° only after 9 hr duration. (RZhFis No 11 1955)

KOLACHEV, B. A.

KOLACHEV, B. A.: "Phenomena observed in the crystallization of fused metals and some aspects of their practical application". Moscow, 1955. Min Higher Education USSR. Moscow Aviation Technological Inst. (Dissertations for the Degree of Candidate of Technical Sciences)

SO: Knizhnaya letopis'. No. 52, 24 December, 1955. Moscow.

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000723710019-1

Kolachev B.A.

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000723710019-1"

137-58-4-8032

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 236 (USSR)

AUTHORS: Petrov, D.A., Kolachev, B.A.

TITLE: Redistribution of Impurities During Crystallization, and Forms Taken by This Process in Crystal Structure (Pereraspredele-niye primesey pri kristallizatsii i formy proyavleniya etogo protsessa v strukture kristalla)

PERIODICAL: V sb.: Rost kristallov. Moscow, AN SSSR, 1957, pp 159-169

ABSTRACT: The alloys Al+4% Cu and Sn+5% Sb are used to show that the distribution of impurities along single crystals grown by the Chokhral'skiy method depends upon the rate at which the crystal is drawn out. At high rates the impurities undergo virtually uniform distribution, but as the speed decreases the nonuniformity increases. Impurities are distributed in specimens in the form of layers that may be identified by X-ray or deep etching. The stratified distribution of the impurities results in a periodic change in their properties and, specifically, in their micro-hardness. The stratified structure (SS) is accompanied by a fibrous one or a substructure. The width of the fibers diminishes with rate of drawing out and disappears completely at very low

Card 1/2

137-58-4-8032

Redistribution of Impurities During (cont.)

rates. A substructure in the form of regular honeycombs is observed on the surface of castings of technically pure Pb. Other instances in which substructures are seen are presented. SS are found in the grains of ingots cast in molds, and also in crystals grown from supersaturated solutions containing impurities. The conclusion is drawn that SS is a general phenomenon possessed by all substances under given conditions. SS results from the periodic entrainment by the growing solid phase of the impurities accumulating at the plane of crystallization because of incomplete diffusion in the liquid phase.

D.O.

1. Single crystals--Impurities--Distribution 2. Metals--Impurities
--Structural analysis 3. Metals--Impurities--Properties

Card 2/2

KOLACHEV, B. A. (Cand. Tech. Sci.)

"The Effect of Chromium, Manganese, and Iron on the Natural Aging of Aluminum-Copper Alloys." In book - Physical Metallurgy and Technology of Heat Treatment. Moscow. Oborongiz, 1958, 179 p.

Results are given of an investigation of the effect of chromium, manganese, and iron on the aging of aluminum alloys containing 4 percent of copper. There are 9 references, of which 4 are Soviet, 3 German, and 2 English.

18(7), 18(6)

AUTHORS:

Livanov, V. A., Bukhanova, A. A.,
Kolachev, B. A.

SOV/163-58-4-44/47

TITLE:

~~Influence of Hydrogen on the Mechanical Properties of Titanium~~
and Its Alloys (Vliyaniye vodoroda na mekhanicheskiye svoystva
titana i yego splavov)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 4,
pp 248-254 (USSR)

ABSTRACT:

This investigation concerned the kinetics of the interaction of titanium and its alloys with hydrogen, as well as the influence of hydrogen on the mechanical properties of titanium and its alloys, using domestic technically pure titanium as starting material. For the time being, the investigation was restricted to the influence of hydrogen on the mechanical properties of titanium and its alloys in the form of smooth specimens with medium rates of deformation at room temperature. Technically pure titanium and its alloys VT-3, VT-3-1, VT-6, VT-5-1 were investigated. The first three alloys are $\alpha + \beta$ alloys, the last is an α -titanium alloy.- The investigations showed that all four alloys absorb the hydrogen more intensely than the technically pure titanium. This seems to be caused by the smaller diffusion rate of hydrogen in titanium in the

Card 1/2

Influence of Hydrogen on the Mechanical Properties
of Titanium and Its Alloys

SOV/163-58-4-44/47

presence of alloying components. The strength characteristics of the technically pure titanium depend, in a wide range of concentration, very little on the hydrogen content, while the stretching and transverse contraction decrease with an increase in hydrogen content. But in the ranges corresponding to real conditions of production, the limit of strength, the flow limit, the stretching, and the transverse contraction are virtually independent of the hydrogen content. The notch impact strength changes little up to 0.015% H₂, but then falls suddenly down to very low values.- The behavior of the two alloy groups was different. A microstructure analysis was carried out to explain the strong differences. The causes are shown here for such different behavior. There are 5 figures, 2 tables, and 10 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy aviatsionnyy tekhnologicheskii institut
(Moscow Air Technological Institute)

SUBMITTED: October 5, 1957

Card 2/2

KOLACHNY, B.A., kand.tekhn.nauk

~~Effect of chromium, manganese and iron on the natural aging of~~
aluminum-copper alloys. Trudy MATI no.31:172-180 '58. (MIRA 11:7)
(Aluminum-copper alloys--Testing) (Metallurgy)

KOLACHEV, B.A., kand.tekhn.nauk [translator]; PETROV, D.A., prof., red.;
L'VOVA, N.M., red.; PRIDAMTSOVA, S.V., tekhn.red.

[Silicon] Kremnii; sbornik statei. Moskva, Izd-vo inostr.lit-ry,
1960. 435 p. (Translated from the English). (MIRA 13:11)
(Silicon)

PETROV, D.A.; KOLACHEV, B.A.

Using the method of extracting the solid phases from the melt
in plotting a constitutional diagram. Issl.splav.tvet.met.
no.2:104-113 '60. (MIRA 13:5)
(Phase rule and equilibrium)

KOLACHEV, B.A.

3/149/60/000/004/007/009

AUTHORS: Livanov, V.A., Kolachev, B.A., Gabidullin, R.M., Musatov, M.I.

TITLE: Distribution of Alloying Components in a Titanium Ingot Obtained by Using a Consumable Portion Electrode

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, 1960, No. 4, pp. 137-144 ✓

TEXT: In the preparation of titanium ingots by the method of consumable electrodes, insufficient homogeneity of the composition and of the mechanical properties was observed over the length and cross section of the ingot. A more homogeneous electrode may be obtained by splitting the titanium sponge into portions and by adding the alloying elements to each portion. If their dimensions are sufficiently small in respect to the liquid pool, the non-uniform distribution of the components in the ingot may be reduced. It may also be decreased by the method of repeated remelting. However, the heterogeneity of the ingot obtained from a portion electrode, will depend, even after repeated remelting, on the ratio of the liquid pool volume to the portion volume. The authors investigated the distribution of alloying elements in an ingot obtained from a portion electrode and determined the permissible dimensions of the portion of the electrode. Formulae are derived

Card 1/3

S/149/60/000/004/007/009

Distribution of Alloying Components in a Titanium Ingot Obtained by Using a Consumable Portion Electrode

for: the distribution of the alloying component over the length of an ingot obtained from a portion electrode with a non-uniformly distributed component; the distribution of the alloying component over the length of a titanium ingot after repeated remelting; the distribution of the alloying component in an electrode containing layers of pure Ti and a pure component. Figure 3 shows the distribution of an alloying component (Al) along a BT-5 (VT-5) alloy ingot calculated by the derived formulae for a case when the volume of the liquid pool is six times greater than the volume of the portion. The distribution of alloying components is non-uniform in the length and in the cross section. The found equations are used to calculate the distribution of the components after repeated remelting and it is established that this process may produce a sufficiently homogeneous material even if the components are distributed non-uniformly in the initial portion electrode, if the ratio of the liquid pool to the portion volume is sufficiently high. To carry out the quantitative verification of the formulae derived, a titanium ingot was cast of an electrode in which 5 cm layers, containing besides Ti 25% Cr-Al alloy, were pressed between 35 cm titanium layers. The volume of the liquid pool was $1/3$ of the volume of one portion. The portions consisted of an alloyed and an unalloyed layer. Figure 5 shows experimental and calculated curves of the distribu-

Card 2/3

S/149/60/000/004/007/009

Distribution of Alloying Components in a Titanium Ingot Obtained by Using a Consumable Portion Electrode

tion of Cr and Al over the ingot. They are in a satisfactory agreement. The considerable non-uniformity in the distribution of Cr and Al over the ingot is caused by the fact that the size of the portions is large in respect to the volume of the liquid pool. Calculations made with the use of the described equations show that satisfactory homogeneous ingots are obtained after second remelting, if the volume of the liquid pool exceeds by three or more times the volume of one electrode portion. In this case the deviation from the rated composition does not exceed ± 0.05 . There are 1 diagram and 4 sets of graphs. ✓

ASSOCIATION: Moskovskiy aviatsionnyy tekhnologicheskii institut (Moscow Technological Aviation Institute) Kafedra metallovedeniya i tekhnologii termicheskoy obrabotki (Department of Metallography and Technology of Heat Treatment)

SUBMITTED: March 9, 1960

Card 3/3

83696

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S/076/60/034/008/010/014
B015/B054

AUTHORS: Petrov, D. A., Kolachev, B. A. (Moscow)

TITLE: Investigation of the Purification of a Substance From Two Impurities by Methods Basing on the Difference in Phase Composition During Crystallization 21

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 8, pp. 1802-1810

TEXT: To produce highly pure substances it is usual, at present, to apply methods which are based on the difference in composition of the liquid and solid phase during crystallization, such as the extraction of the solid phase from the melt according to Chokhrol'skiy, or the zone melting. In some investigations of semiconductor metallurgy (Ref. 1) it was assumed that the distribution coefficients of the impurities in a material are equal to the distribution coefficients of these impurities in the corresponding binary systems, which is incorrect since there is an interaction between the material and the impurities. As the interaction

Card 1/3

83696

Investigation of the Purification of a
Substance From Two Impurities by Methods
Basing on the Difference in Phase
Composition During Crystallization

S/076/60/034/008/010/014
B015/B054

can be seen from the phase diagram, the distribution coefficients of the impurities should be determined from the corresponding phase diagram. In the present case, the authors show, with the aid of Konovalov's rule among other things, that in an arbitrary three-component melt, representing a system of continuous solid solutions, the distribution coefficient for the low-melting impurities will be lower than for the higher-melting impurities, or - in other words - a more efficient purification will be attained by the component with the lower melting point. The distribution coefficient of the one impurity changes in dependence on the concentration of the other one; it rises and drops corresponding to the character of the phase diagram of these impurities with the basic substance. To check the above explanations qualitatively, the authors studied experimentally the distribution coefficients of Cu and Mn, Cu and Si, as well as Fe and Si in aluminum at different concentrations (Table). The distribution coefficient of Fe in Al rises considerably in the presence of Si, i.e. the efficiency of aluminum

Card 2/3

83696

Investigation of the Purification of a
Substance From Two Impurities by Methods
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S/076/60/034/008/010/014
B015/B054

refining (elimination of Fe) by the extraction method deteriorates in the presence of Si. As opposed thereto, the efficiency of aluminum refining for the elimination of Mn increases with the content of Cu since the distribution coefficient of Mn in Al drops in the presence of Cu. Thus, it is possible to utilize the reduction of the distribution coefficient of one impurity in the presence of another impurity to increase the purifying effect in a substance with difficultly separable impurities, i.e. impurities with a distribution coefficient near unity. There are 8 figures, 1 table, and 4 references: 3 Soviet and 1 US. X

ASSOCIATION: Moskovskiy aviatsionnyy tekhnologicheskii institut
(Moscow Aviation Technological Institute)

SUBMITTED: November 22, 1958

Card 3/3

S/536/60/000/043/008/011
E021/E435

AUTHORS: Livanov, V.A., Professor, Bukhanova, A.A., Candidate of Technical Sciences and Kolachev, B.A., Candidate of Technical Sciences

TITLE: The Interaction of Titanium With Moist Atmosphere and Air

PERIODICAL: Moscow. Aviatzionnyy tekhnologicheskii institut. Trudy. No.43. 1960. pp.91-99. Termicheskaya obrabotka i svoystva stali i legkikh splavov

TEXT: The kinetics of the interaction between titanium sponge of 2 types with moist atmosphere and the kinetics of extraction of volatile impurities in the process of vacuum roasting at various temperatures were studied. The chemical composition of the sponge (in %) was: TГ2 (TG2): 0.3 Fe, 0.15 Si, 0.05 C, 0.07 Mg, 0.2 O₂, 0.03 H₂, 0.05 N₂, 0.07 Cl, remainder Ti; TГ3 (TG3): 0.4 Fe, 0.2 Si, 0.07 C, 0.12 Mg, 0.519 O₂, 0.026 H₂, 0.397 N, 0.14 Cl, remainder Ti. A titanium electrode prepared from TG2 was also investigated. 12 to 13 g of the titanium was placed in a desiccator which had a beaker of water in the bottom. A moist atmosphere was obtained and the reaction was studied by Card 1/11

The Interaction of Titanium ...

S/536/60/000/043/008/011
E021/E435

following the change in weight of the titanium using an analytical balance. A vacuum apparatus was used to study the kinetics of extraction from the sponge of absorbed moisture and other volatile impurities. The change in weight with time (in days) of the electrode and TG2 sponge is shown in Fig.2. The weight of the electrode (curve 1) increases more than that of the sponge (curve 4) from which it was prepared. The initial sponge absorbs less water vapour than the sponge preliminarily dried at 300°C (curve 3). The electrode preliminarily washed in hot water (curve 2) is less hygroscopic than the initial electrode. Fig.3 shows the increase in weight of sponge TG3 in a moist atmosphere (curves 1 and 2) and air (curve 3). Curve 1 is for the sponge in its initial condition and curve 2 after saturation with hydrogen and a vacuum treatment at 900°C. TG3 is more hygroscopic than TG2 but the hydrogen and vacuum treatment decrease its tendency to absorb moisture. The result is explained by the fact that there is more $MgCl_2$ on the surface of TG3 than on TG2. This is shown by the chemical analysis after boiling the sponge and the electrode (Table 2). When the electrode is pressed, more $MgCl_2$ is

Card 2/11

The Interaction of Titanium ...

S/536/60/000/043/008/011
E021/E435

uncovered on the surface. After removing the $MgCl_2$ from the surface, the ability of the sponge and electrode to absorb moisture decreases. Fig.4 shows the change in weight (decrease) with time (in hours) of TG2 and TG3 with gradually increasing temperature as the process of vacuum extraction proceeds. Fig.5 shows the quantity of moisture extracted from TG2 against time (in hours) during vacuum extraction. The quantity extracted is 0.0044% after 10 hours at 20°C. Raising the temperature to 115°C increases this to 0.0062%. Further increases in temperature have little effect. Fig.6 shows the change in weight against time (in hours) during vacuum extraction of the electrode at various temperatures. Increasing the temperature from 20 to 100 °C gives an increase in the amount extracted. Further increases in temperature lead to a decrease, indicating that at these temperatures interaction between the water vapour and the electrode occurs. Fig.7 shows the change in weight against time (in minutes) of TG3 during vacuum extraction. Increasing the temperature from 20 to 400°C increases the amount extracted. Fig.8 shows the change in weight of TG2 sponge and the electrode (bottom curve) during alternate saturation with water vapour and vacuum extraction at 100°C.

Card 3/11

23017

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S/536/60/000/043/009/011
E021/E435

AUTHORS: Livanov, V.A., Professor, Bukhanova, A.A., Candidate of Technical Sciences and Kolachev, B.A., Candidate of Technical Sciences

TITLE: The Influence of Hydrogen on the Mechanical Properties of Titanium and its Alloys With Various Straining Conditions

PERIODICAL: Moscow. Aviatsionnyy tekhnologicheskiy institut. Trudy. No.43. 1960. pp.100-105. Termicheskaya obrabotka i svoystva stali i legkikh splavov

TEXT: The mechanical properties of titanium and its alloys were tested on smooth samples at room temperature with three rates of strain: 0.1 to 0.2 mm/min, 3 to 5 mm/min and 30 to 50 mm/min. Specimens tested were commercial titanium, α alloy BT5-1 (VT5-1) and two $\alpha + \beta$ alloys BT3-1 (VT3-1) and BT6 (VT6). Chemical analysis is given in Table 1. Samples were forged at 1000°C from billets made in a furnace with a consumable electrode. They were cooled in air and specimens were cut from them for testing. The specimens were treated in vacuo at 900°C for 6 hours and cooled in Card 1/8

The Influence of Hydrogen ...

23017
S/536/60/000/043/009/011
E021/E435

the furnace, in order to remove the hydrogen. The mechanical properties are given in Table 2. The specimens were then saturated with hydrogen, the hydrogen content being determined from the change in weight and from the change in pressure of hydrogen in the system. The hydrogen in the samples after vacuum treatment was determined by the fusion method. Fig.1 to 4 show the influence of hydrogen on the mechanical properties of the alloys (Fig.1 - commercial Ti; Fig.2 - VT5-1; Fig.3 - VT3-1; Fig.4 VT6). The properties increase markedly with increase in strain rate. The plastic properties decrease considerably with increase in hydrogen content, especially the reduction in area. Alloy VT6 is not subject to hydrogen embrittlement even up to 0.05% H₂. This may be because there is no eutectoid decomposition of the β phase with decrease in temperature. There are 4 figures, 2 tables and 4 non-Soviet-bloc references. The references to English language publications read as follows: H.M.Burte, Metal Progress, 1955, No.5, p.115-120; E.J.Ripling, J.Metals, 1956, 8(II), No.8, p.907-913; R.I.Jaffee, D.A.Lenning, C.M.Graighead, J.Metals, 1956, 8(II), No.8, p.923-928.

Card 2/8

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23018

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E111/E435

AUTHORS: Kolachev, B.A., Candidate of Technical Sciences,
Gabidullin, R.M., Engineer and Konokotin, V.V., Engineer

TITLE: Some Relationships in the Distribution of Components
in Zone Melting, Arc Melting With a Consumable
Electrode and in Continuous Casting

PERIODICAL: Moscow. Aviatsionnyy tekhnologicheskii institut.
Trudy. No.43. 1960. pp.106-116. Termicheskaya
obrabotka i svoystva stali i legkikh splavov

TEXT: Directed crystallization is a common feature of zone
melting, consumable-electrode melting and continuous casting, but
the rates of movement of the liquid zone relative to the solid
being formed is very different (0.05 to 5, 10 to 15 and
100 to 150 mm/min, respectively). The speed of directed
crystallization has a considerable effect on longitudinal uniformity
of composition (D.A.Petrov, B.A.Kolachev, ZhFKh, 1957, No.10).
With a sufficiently high speed of movement of the liquid phase its
composition and that of the crystallizing solid become equal and
uniformity will be complete, since the liquid composition stays
Card 1/8

23018

Some Relationships in ...

S/536/60/000/043/010/011
E111/E435

constant. If the liquid bath is fed with metal of different composition, bath composition (and that of the solid) changes, as has been observed in titanium-alloy metallurgy (A.D.Makvillen, M.K.Makvillen, Titan, Metallurgizdat, 1958), when titanium sponge is mixed with alloying components and compacted to form an electrode. Compacting in separate portions does not give a uniform electrode and even after double remelting the titanium billet will still be heterogeneous because the electrode (produced in the preceding melting) is heterogeneous. For a more detailed investigation of this problem, the authors have made use of the common feature of zone and arc melting with a consumable electrode. They consider the longitudinal distribution of alloying components in a billet obtained by zone melting of an electrode with a non-uniform longitudinal distribution of the alloying component and a concentration at a point with coordinate x defined by the function $f(x)$. They assume that the liquid bath is a cylinder of height h , the melting surface and crystallization front are flat, and that the rate of movement of the liquid zone is sufficient to prevent segregation on the macro-scale between the liquid and solid phases while giving uniformity of liquid

Card 2/8

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Some Relationships in ...

S/536/60/000/043/010/011
E111/E435

composition at any instant. They deduce the following equation for the concentration C (in weight %) of the alloying component in the liquid phase

$$C = e^{-\frac{x}{h}} \left[\int \frac{f(x+h)}{h} e^{\frac{x}{h}} dx + K \right] \quad (1)$$

where K is determined from the boundary conditions. They use this equation to evaluate the uniformity of distribution of components in a titanium billet obtained by the method of a composite consumable electrode, taking the extreme case of an electrode consisting of alternating portions of titanium (length a) and alloying component (length b) in close contact. They consider two conditions. In one the melting front moves in pure titanium, i.e. $f(x) = 0$ and $C = Ae^{-x/h}$, where A is a constant found from the boundary conditions. In the other the front moves in the pure alloying component, when $C = 1 + Be^{-x/h}$, where B is a constant determined from the initial conditions. Using the method of complete induction, we obtain for the section

Card 3/8